LabLink
your connection to Brookhaven Lab's world-class science

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World-Class Science; World-Wide Asset

Not only is BNL a uniquely valuable local resource as a major contributor to the growth of Long Island's technology-based economy and as one of New York State's largest scientific research centers, the Lab also has a huge worldwide impact. This is evidenced by the recent honors awarded to two of our scientists and by the diversity in the attendance at an annual users' meeting.

The Alexander von Humboldt Foundation, Bonn, Germany, recently honored Lab physicist and Stony Brook professor Dimitri Kharzeev with the very prestigious Humboldt Research Award.

Professor Kharzeev was chosen for this award, which is given to internationally renowned scientists and scholars, for predicting a form of matter that existed in the very early universe.

"The Humboldt award is a well-deserved recognition of Dima's outstanding achievements as one of the foremost intellectual leaders in theoretical physics at Brookhaven and Stony Brook," said Berndt Mueller, Associate Laboratory Director for Nuclear and Particle Physics at BNL.

In June, some 200 scientists from 20 countries trekked to the Lab – from around the U.S., Africa, Asia, and Europe – for four days of workshops and seminars during the Relativistic Heavy Ion Collider (RHIC) and Alternating Gradient Synchrotron (AGS) Users' Meeting. They discussed new results from an array of particle collisions at RHIC, topics such as proton spin, the Large Hadron Collider, upgrades to the RHIC detectors, and generated ideas for new experiments.

In July, Satoshi Ozaki, BNL senior scientist emeritus, received Japan's prestigious

Satoshi Ozaki

Dimitri Kharzeev

Order of the Sacred Treasure, Gold Rays with Neck Ribbon, for his outstanding contributions in physics and his significant contributions to the promotion of Japan-U.S. cooperation in physics. Ozaki's work in experimental particle physics and large scale detector development at Brookhaven led to an invitation to direct the construction of the first major high-energy particle collider in Japan. Since 1978, he has been involved in the initiation and oversight of the Agreement on High Energy Physics between the Japanese and U.S. governments and was essential in securing Japanese support for projects related to RHIC, including the PHENIX experiment as well as the partnership between RIKEN—Japan's Institute of Physical and Chemical Research—and Brookhaven for the RIKEN BNL Research Center (RBRC).

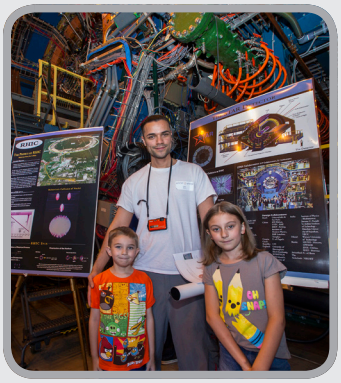
Lab Hosts 6,000 Visitors

Summer Sundays 2013 has just wrapped up with more than 6,100 of our neighbors, from near and far, visiting the Lab to learn about our cutting-edge science and tour our world-class science facilities. The 2013 program was staffed by more than 300 volunteer scientists, employees, facility users, summer interns, and Department of Energy representatives who welcomed record numbers of visitors and helped make their experience inspirational.

The facilities visited over four consecutive Sundays included our Science Learning Center and the Fire House, the Center for Functional Nanomaterials, the National Synchrotron Light Sources I and II, and the Relativistic Heavy Ion Collider (RHIC). Visitors were treated to hands-on demonstrations and chatted with researchers about their work at the facilities.

In Berkner Hall, Einstein came alive, the laser lights were spectacular, and visitors young and old alike were delighted by the Magic of Energy and the Fabulous Physics of Mr. Fish. Along with attending the science shows, guests listened to talks on climate change, nanotechnology, the science of RHIC, and were updated on the ATLAS project at the Large Hadron Collider.

To learn more about Summer Sundays 2013 visit: http://www.bnl.gov/community/summer_sunday.asp



Summer Sundays included tours of the Relativistic Heavy Ion Collider, including the massive STAR detector.

Free Calibrators from Deep Space Used to Tune Experiments

Trillions of supercharged subatomic particles known collectively as “cosmic rays” originate from deep space—probably from supernovae explosions and possibly outside the Milky Way galaxy. Some travel at nearly the speed of light and can easily pass through almost everything you see: your hand, the building behind you, the Earth’s crust—and even the massive detectors of giant physics experiments like those at the Lab’s Relativistic Heavy Ion Collider (RHIC).

That turns out to be a boon for RHIC physicists, who study subatomic smashups of gold ions inside RHIC’s detectors to get clues about what the early universe was like. They’ve come up with ways to use the far-flung supernovae remnants to calibrate the detectors to be sure the data from their experimental particle collisions is recorded as precisely and accurately as possible.

Because cosmic rays are readily available, easy to identify, abundant, and free, they’re the perfect micro-tools for calibrating and aligning RHIC’s cutting-edge detection instruments. The collider isn’t active all year round, and often a period of dormancy leaves these sensitive detecting tools out of sync—like the keys of a piano that haven’t been played for several months. A piano tuner uses an external source that provides a note in perfect pitch to calibrate the keys. The detectors at RHIC require a similar alignment process when they’re first turned on. The physicists use the predictable, consistent radiation patterns of cosmic rays coming in from space as the “perfect pitch” for “tuning” the detectors.

To learn more visit: http://www.bnl.gov/newsroom/news.php?a=23809

Happenings

- **September 12** – Community Advisory Council, meeting begins at 7 PM. Berkner Hall, Room B.
- **September 18** – Brookhaven Women in Science Event, “Wife, Mother, Scientist or is it the other way around?!.” Presented by Mina Bissell, Lawrence Berkley National Laboratory. 4 PM. Berkner Hall Auditorium.
- **September 23** – Pegram Lecture, “Supernovae and the Discovery of the Accelerating Universe.” Presented by Adam Riess, Johns Hopkins University. 4 PM. Berkner Hall Auditorium.

*The events above are free and open to the public. Visitors 16 and over must bring a photo ID for access to BNL events.

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LabLink is a monthly publication from Brookhaven National Lab’s Community Relations Office that will keep you informed about happenings at the Laboratory, help you understand some of the science behind our research, and invite you to our many educational and cultural events. To learn more about the Lab visit www.bnl.gov.

BROOKHAVEN NATIONAL LABORATORY

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